

REMARKS

The applicant's remarks below are preceded by quotations of related comments of the examiner, in small, boldface type.

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Applicant submits formal drawings with this response. These formal drawings have been amended to designate Figures 1 and 2 as prior art.

Claim 23 is objected to because of the following informalities:

The claim appears to be an independent claim claiming continuing subject matter from the claim above It and probably should have been written as a dependent claim depending from claim 22. Appropriate correction is required.

Claim 23 has been amended.

Claim 25 is objected to because of the following informalities:

The claim appears to be an independent claim claiming continuing subject matter from the claim above it and probably should have been written as a dependent claim depending from claim 24. Appropriate correction is required.

Claim 25 has been amended.

Claims 9,10,15,20,21,27, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claims 9,15,18,20,21,27, the "MAFRP" or "minimum average forwarding rate percentage" is not enabling for one skilled in the art to make/use

the invention. One skilled in the art could not reasonably gauge what values the MAFRP takes on in order to make/use the invention without undue experimentation. The applicant has provided no disclosure on how the values for the MAFRP are limited or even if they are limited or what values go into the MAFRP. So when, on page 12 line 8, of the spec. when one skilled in the art, a network operator, configures a MAFRP for each of the DiffServ classes, there is no disclosure from applicant on how the network operator chooses values of MAFRP without undue experimentation. Still further down the spec on line 15, what the MAFRP represents is not enough disclosure to remove the undue experimentation on the network operator. The Examiner did multiple searches on googl.com and EAST, the term appears to not be a term of art that one skilled in the art would know.

The applicant respectfully disagrees. The minimum average forwarding rate per packet (MAFRP) is the bandwidth assigned to a particular class of packets (see page 12, lines 15-20 of the specification). A person of skill in the art implementing a scheduler would have understood that bandwidth (which is represented by the MAFRP) would have to be assigned to classes of data packets as an implementation detail that depends on the resources available and the expected network load of the defined service classes. The fact that a person of ordinary skill in the art would have understood how to assign bandwidth to packets of service classes is evidenced by IETF RFC 2475, which defines the DiffServ architecture (and is incorporated by reference on page 2 of the specification). This reference, which is written for persons of skill in the art, defines various classes of data packets and assumes that a person of ordinary skill in the art would know how to assign bandwidth to the defined service classes to achieve the requisite Quality of Service level for each class. See, e.g., IETF RFC 2475, p. 20.

Regarding claim 18, fails to disclose "a planned recipient level" so that one skilled in the art would know how to make/use the invention. The examiner chose the DRC to represent this language in the art rejection of claim 18.

Claim 18 has been amended to recite "a planned selection at the recipient level" for greater clarity. An example of a scheduler that makes planned selections at the recipient level is described at page 16, lines 13-15 of the specification, where an inter-class scheduler uses an intra-class scheduler to make a selection at the recipient level. The specification also discloses that the intra-class scheduler can be implemented using the Qualcomm algorithm, as described on page 13, line 3.

Claims 1-8,11-14,16,18,22,24,26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jalali et al. [Data Throughput of CDMA-HDR] and further in view of AAPA [Applicant Admitted Prior Art].

Regarding claim 1, Jalali discloses all the following subject matter: a method comprising:

receiving data packets at a communications node, (pg 1856, col. 1, lines 26-27 - if the scheduler has data to send it must have received it)

associating each of the received data packets with a rate. (pg. 1855, col. 1, lines 32-37)

transmitting packets corresponding to the received data packets to recipients, and (pg 1856, col. 1, lines 26-27)

controlling the order in which packets are transmitted based on the transmission rate (pg 1856, col. 1, lines 34-46)

Jalali fails to disclose that the transmission order is based on the service class of the packets.

Applicant discloses that the DiffServ architecture classifies traffic as it enters the network. (spec. page 7, lines 11-15) The classification happens at the same time as the above associating step where the rate of traffic is classified as well. Therefore because the packet is associated by rate it is also classified and when transmission occurs, the transmission is based upon the rate and classification.

It would have been obvious for one skilled in the art at the time of invention modify Jalali et al. with AAPA because the network could more precisely controlled allowing better traffic flow.

The applicant disagrees. Neither Jalali nor the allegedly applicant-admitted prior art (i.e., the DiffServe architecture) disclose or suggest at least controlling “the order in which packets are transmitted based on the transmission rate *and* the service class of the packets”, as required by independent claims 1 and 26 (emphasis added).

Jalali discloses a scheduling algorithm that attempts to maximize throughput through a link by prioritizing packets with highest transmission rate and the highest average rate that the receiver has received previous packets. As acknowledged by the Examiner, Jalali’s scheduling algorithm fails to disclose a transmission controlling the order of transmission based on the transmission rate and the service class of packets.

The DiffServ architecture also fails to disclose or suggest this limitation. The DiffServ architecture, which is described more fully in IETF RFC 2475, defines various service classes for packets and requires that a particular Quality of Service (QoS) level be achieved for each of the service classes. However, the DiffServ architecture does not disclose or suggest any particular

scheduling algorithm, let alone one that controls “the order in which packets are transmitted based on the transmission rate and service class of the packets” as required by independent claims 1 and 26. Accordingly, a system designer could have implemented the DiffServ architecture using any scheduling algorithm that achieves the target QoS levels for the service classes.

Given that neither of the two references discloses or suggests that the order of packet transmission be based on service class of the packets, combining them (even if there were a motivation to do so, which the applicant disputes) would not have resulted in the claimed invention.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicant : Firass Abi-Nassif et al.
Serial No. : 09/704,898
Filed : November 2, 2000
Page : 11 of 11

Attorney's Docket No.: 12144-004001

Enclosed is a \$55.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Respectfully submitted,

Date: 11/5/04



Stephen L. Romine
Reg. No. 43,056

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

20919306.doc